The Big City Bug Hunt toolkit

A community food growers' guide to biodiversity

CAPITALgrowth

sustain

From bug enthusiast to insect expert

London's urban food-growing spaces are cherished places that not only nourish people but also birds, bats, butterflies, beetles and bees. This toolkit will help you become a citizen scientist, learn about the biodiversity in your food growing space and how to help your buggy garden friends thrive.

In collaboration with Greenspace Information for Greater London CIC (GiGL) and iNaturalist, we invite you to take part in The Big City Bug Hunt. Join the London-wide effort to record the insects and other wildlife in your garden and build evidence of your impact as well as contributing towards mapping biodiversity across London's food growing spaces. Together let's prove that urban food growing spaces are important natural habitats.

Contents:

How to get involved

Help uncover the hidden life in our gardens by spotting and recording insects. Joining the project is simple you only need to do two things:

1. **Register your garden** here:

2. **Sign up to iNaturalist**:

create an account* by downloading the app or visiting iNaturalist.org

Then we'll create your garden site as a collection project in iNaturalist and email you the details.

WHAT HAPPENS NEXT?

Get out into the garden and start looking for bugs! See something cool? T**ake pictures** as you go about your gardening.

Submit your data by adding a photo and your findings onto iNaturalist - its super easy!

Want to involve your growing community? Get a group together and do a **pond dip** (page 5) or a **bug survey** (page 15) It's a fun educational activity that will surprise and delight all ages, and could get new volunteers involved too.

iNaturalist is a platform for sharing photos and recordings of wildlife, identifying species, and contributing valuable data for conservation. Your iNaturalist records will be submitted to GiGL to help monitor across the city.

Bug hunt activity guide

This guide focuses on pollinators, as they are common and easy to spot, but feel free to discover and record the wide range of critters you find in your garden.

Here's a fun and simple way to get a group together to learn about and record the insect life that's in your garden.

Equipment you'll need:

just your phone with the **iNaturalist** app downloaded - simple as!

1. When you've made iNaturalist account and joined your growing site project, head into your garden.
2. You can go solo, or if you're in a group, you can split up.
3. **Spend 15 minutes observing insects in different parts of your growing site**, in the flower and vegetable beds, by trees and compost heaps.
4. Lift up logs, pots and trays and see what's underneath.
5. Spot and snap, try to take clear pictures of any insects you see.
6. Upload your photos to **iNaturalist** to help identify and record them.
7. Share your findings – if you have a WhatsApp group this is a great way to share what you've spotted with your wider garden community

Once you've registered in the project you will be able to see your sightings and you can compare your garden with others taking part across the Capital Growth network.

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Pond dipping activity guide

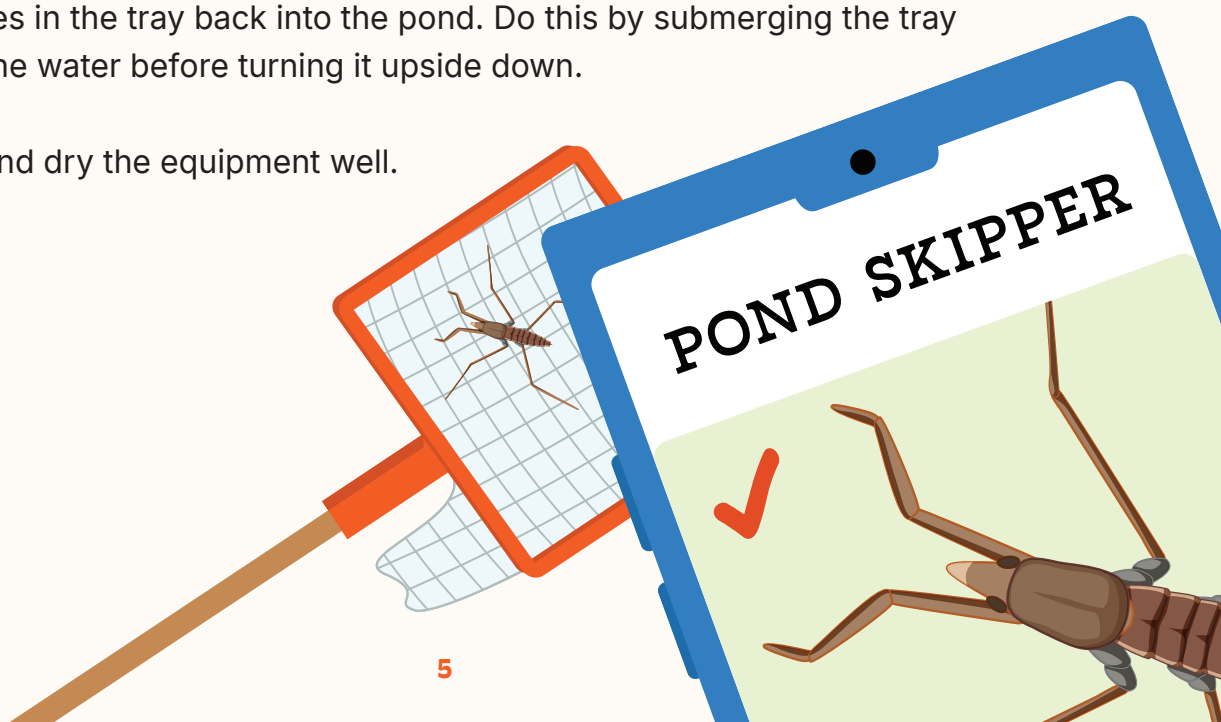
Ponds are incredible habitats for both water-based and land dwelling creatures. Curious to see what's living below the depths? Follow our pond dipping instructions.

Equipment you'll need:

Pond dipping net (or a kitchen sieve), white trays (or clean margarine pot), collecting pot and of course your phone with iNaturalist.

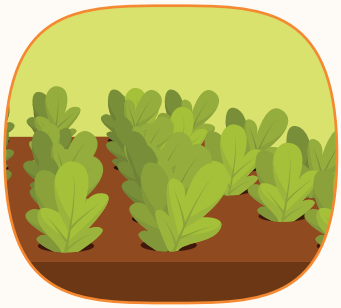
Methodology:

1. Put some pond water in your tray (not tap water!)
2. Swish your net in a figure of eight in the pond. Take it out of the water and turn the net upside down in your tray and swish the net around so the insects transferred into the tray- careful none are left behind!
3. Let the water settle and start to look at what you have collected. You can use the pots to catch bugs you want to look at closely.
4. Take a photo and submit the record to iNaturalist.
5. Once you have finished identifying the creatures tip the water and the creatures in the tray back into the pond. Do this by submerging the tray under the water before turning it upside down.
6. Clean and dry the equipment well.



Help nature thrive

Different insects live, feed and mate in various kinds of habitats; it's essential that your gardens can provide a range of habitats to encourage a diversity of wildlife.



VEG BEDS

prepared areas of soil for growing food provide food and shelter for creatures

ORCHARDS OR FRUIT TREES

can provide food and shelter for thousands of species

WILDFLOWER MEADOWS

provide a wide range of nectar-rich plants for pollinators

INSECT HOTELS

create shelter and nests for lots of bugs and a place to hibernate in winter

COMPOST AREA

creates shelter nests and a rich source of food for insects, worms and micro-organisms

No space for a meadow? Try companion planting - tuck in cosmos, poppies and nasturtiums between your veg

Go wild! Untamed and messy garden areas can be a huge boost for nature

Grow a mix of flowers that bloom from early spring to autumn & plant in bold clusters that are easy for bugs to find

DEADWOOD

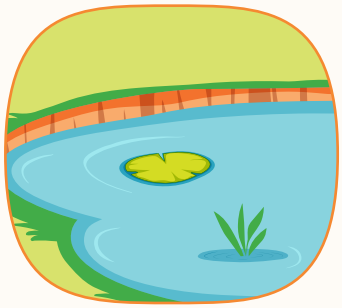
woodpiles or dead tree trunks are a paradise for beetles, moths, spiders and wasps

Encourage predators like wasps, ladybirds and frogs, they'll manage pests for you

BARE GROUND

allows ground nesting bees and beetles burrow into bare earth or rocky areas

Ponds don't have to be big. Even a washing up bowl can be a mini-pond and make a big difference



PONDS

will attract a wide range of life to your garden

HEDGES

dense shrubs and low trees provide essential habitat and wildlife corridors

Mix it up! Different insects need different homes so include a variety of habitats

Scan the code

for planting guides

Fact file: Butterflies

Butterflies are (usually) brightly coloured insects that fly during the day. They have six jointed legs and four wings. They have a four-stage life cycle: egg, larva (caterpillar), pupa and adult.

TOP TIPS:

- Plant nectar-rich flowers like clovers, buddleia, cornflowers, and lavender that will bloom across the season.
- Deadhead flowers and mulch with compost to keep flowers healthy and alive for longer.
- In late summer, leave overripe fallen fruit under trees for them to eat.

FACT FILE:

- Since 1976, 80% of butterflies have declined in the UK.
- Butterflies taste with their feet using chemosensory receptors and can "taste" a plant to see if it is suitable for laying eggs on.

HOLLY BLUE

COMMA

BRIMSTONE

LARGE WHITE

SPECKLED WOOD

PEACOCK

Fact file: Moths

Moths belong to the order *Lepidoptera*, just like butterflies, with two pairs of broad wings. They are usually decorated with dull colours, (but not always) and are mostly nocturnal, (also not always!).

TOP TIPS:

- Don't be so tidy. Moths and caterpillars need old leaves, stems and debris to hide from predators. In winter, leave a scrap pile for them.
- Plant flowers that release their scent at night for nocturnal moths, like evening primrose, jasmine, morning glory, wisteria or night stocks.

FACT FILE:

- Recent research has shown that for certain crops, 50% of the pollinator services are provided by night-flying moths, not bees.
- Only 2 out of the 2500 species of moth in the UK will eat your woollen socks- that's minuscule, not all moths are enemies!

MINT MOTH

CINNABAR

TREELICHEN BEAUTY

GREAT OAK BEAUTY

JERSEY TIGER

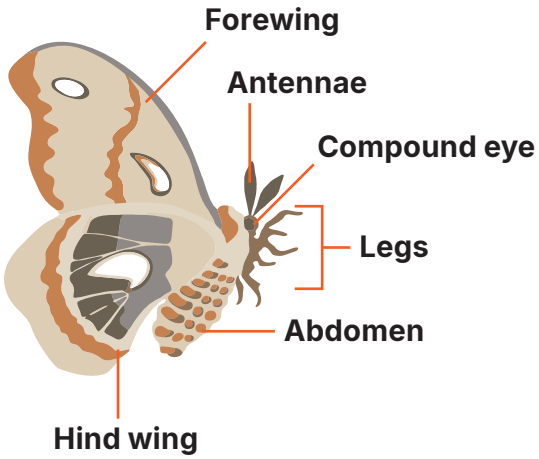
ELEPHANT HAWK MOTH

Spot the difference: Moths and butterflies

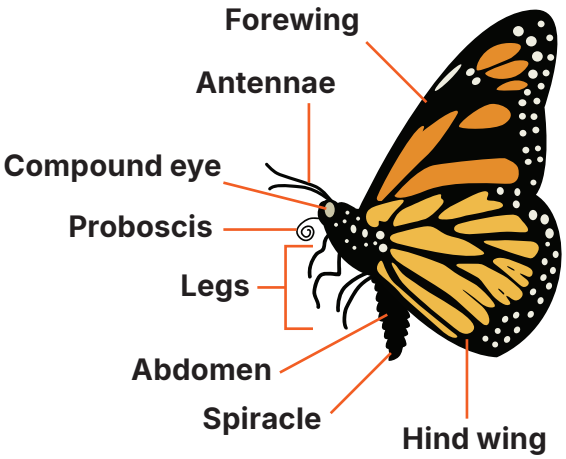
Moths and butterflies can look very similar, but there are a few key features that can help you tell them apart.

	BUTTERFLIES	MOTHS
ACTIVITY	Butterflies are diurnal (active during the day)	Most moths are nocturnal (active at night) however the ones we listed are diurnal
ANTENNAE	They have slender antennae with clubbed tips	They have feathery or threadlike antennae
RESTING POSITION	Butterflies usually rest with their wings closed vertically over their backs	Moths rest with their wings spread flat over their body

MOTH



BUTTERFLY



Fact file: Bees

Bees are fuzzy flying insects and have two sets of wings; they have six legs and straw-like mouth parts that can suck up nectar. There are over 270 species of bees in the UK, including the familiar honeybee, bumblebees, and many species of solitary bees that don't live in hives.

TOP TIPS:

- Many bees require undisturbed bare soil for nesting, whilst others, like honeybees and bumblebees, use tree hollows, rock crevices, dead wood, or even man-made structures for shelter
- Provide little water dishes filled with pebbles in hot weather so they can hydrate

FACT FILE:

- 35 bees species in the UK are under threat of extinction, due to pesticides, habitat loss and climate change. If you find a struggling bee, you can nurse it back to health with a 50/50 sugar and water mix on a teaspoon
- Bees can unhook a set of their wings when they are resting

RED-TAILED BUMBLEBEE

LEAFCUTTER

GARDEN BUMBLEBEE

TREE BUMBLEBEE

ASHY MINING

BUFF-TAILED BUMBLEBEE

Fact file: Wasps

A two paired, winged insect which has a narrow waist and a sting and is typically yellow with black stripes. Social wasps construct paper nests from wood pulp and raise their larvae on a diet of insects. However, many wasps don't live in nests but in burrows in bare ground, tree hollows and even dense shrubs.

Wasps often get a bad rep for being responsible for painful stings, but when these critters aren't buzzing around summer picnics, they are doing crucial pollination work for vital crops like apples and fennel.

TOP TIPS:

- In late summer, they can become aggressive because they are hungry, leave a couple of raspberries on the plant, or some plums on the floor
- If you don't have space for a pond, put a shallow dish with pebbles or gravel will give wasps and other small insects a safe place to drink

FACT FILE:

- Wasps offer free pest control, eating aphids, flies and other insects to feed their larvae
- Only female wasps can sting, and they only do so in self-defence

COMMON WASP

GERMAN WASP

EUROPEAN HORNET

Fact file: Hoverflies

Hoverflies belong to the Diptera order and are often called flower flies. There are around 280 species in the UK! They can be tricky to spot because many mimic bees and wasps, but don't worry, we've got some top tips for identifying these sneaky flies on page 14. Hoverflies get their name from their ability to hover in mid-air, and they play an important role in pollination as well as breaking down organic matter (also called detrivores).

TOP TIPS:

- Hoverflies don't have long tongues, so plant flowers with accessible pollen platforms like Guelder Rose, blackberries, or fiddleneck
- Create a hoverfly lagoon to provide a safe home for larvae
- Flies like untidy patches of garden and are attracted to ivy and log piles

FACT FILE:

- Hoverfly larvae can be a great pest control, snacking on aphids
- Even though they look like bees and wasps, hoverflies don't sting- they are completely harmless
- Marmalade hoverflies migrate over the British channel by flying at high altitudes

BUMBLEBEE MIMIC

BATMAN

HORNET MIMIC

MARMALADE

COMMON BANDED

THE FOOTBALLER

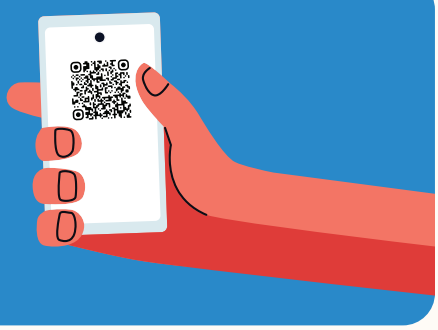
Spot the difference: Bees, wasps and hoverflies

Knowing how to tell bees, wasps, and flies apart can help you better understand and support garden wildlife. Below are some key differences to look out for.

	BEE	WASP	HOVERFLY
BODY SHAPE	Fuzzy and rounded, with no narrow waist	Smooth and slender with a narrow “wasp waist”	Usually slender with 3 distinct parts
EYES	Smaller, oval-shaped	Oval shaped eyes	Large and rounded, covering most of their head
WINGS	Two pairs (four wings total)	Two pairs	Just one pair
ANTENNAE	Long and jointed	Long and jointed	Very short

Scan the code

for further resources on IDing hoverflies, bees and wasps



How to create a good biological record

Biological records are useful for many purposes and to many different people:

- to draw out trends (like the RSPB's Big Garden Birdwatch)
- to indicate habitat quality so that improvements can be made
- to track invasive species to better contain spreads
- to demonstrate the value of an area to wildlife

To make your bug spotting count, a complete biological record should include 5 key details: ***WHO***, ***WHAT***, ***WHERE***, ***WHEN*** and ***EVIDENCE***.

WHAT DID YOU SEE?

→ Identify to species level, iNaturalist can help with this.

WHO MADE THE OBSERVATION?

→ Having a named person is important for verification.

WHERE DID YOU FIND IT?

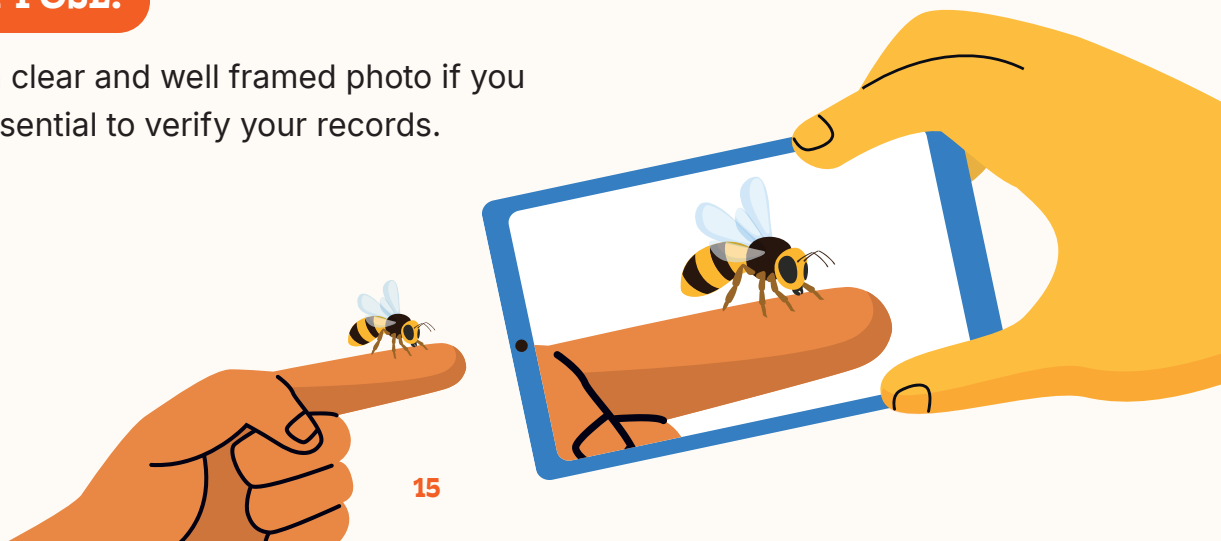
→ iNaturalist will be able to geolocate your coordinates and you can add more detail in the notes section.

WHEN DID YOU SEE IT?

→ It helps us understand insect activity across seasons.

STRIKE A POSE!

→ Include a clear and well framed photo if you can – it's essential to verify your records.



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CAPITAL growth

Capital Growth is London's largest food-growing network, representing over 2,000 community growing projects across the city. It supports orchards, community farms, and gardens by providing resources and training, connecting growers with one another, and campaigning on behalf of London's growing community.

sustain
the alliance for better food and farming

Sustain is a powerful alliance of organisations and communities working together for a better system of food and farming, and cultivating the movement for change.

Interested in discovering more about the insect life in your garden?

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